

Preliminary Comments on VADEQ's NPDES CAFO Permits
Includes DEQ responses

Re: CAFO Murphy Brown LLC, Farms 1-5 (VA0C50001)
CAFO Murphy Brown LLC, Farms 6-8 (VA0C50002)

Based on our preliminary review of the draft permits, including their Nutrient Management Plans (NMPs), we offer the following comments. These comments follow up on our June 4, 2014 phone conversation. More detailed information will follow.

Draft Permits

1. It is our understanding that Part II.C.4. Farm Operation Manual (FOA) addresses/complements, some but not all, of the nine minimum requirements for NMPs set forth in 40 CFR § 122.42(e)(1)(i-ix). Please provide us with a FOA for our review and comments.

DEQ-Response to comment:

We will provide EPA with a Farm Operating Manual once it is submitted by the permittee for DEQ approval. The permit requires the Permittee to develop and submit an approvable Farm Operating Manual within 90 days of the effective date of the permit. This is a typical timeframe for submittal of O&M Manuals for DEQ permits (VPDES and VPA).

NMPs

1. An NMP is a detailed planning document that identifies conservation practices and management activities that, when implemented, help to ensure that both production and natural resource protection goals are achieved. The objective of an NMP is to document those practices and activities that will help achieve the goals of the producer and protect or improve water quality.

Every NPDES permit issued to a CAFO must require that the CAFO implement the terms of a site-specific NMP approved by the Director pursuant to 40 CFR § 122.42(e)(5). Those site-specific terms of the NMP are defined as “the information, protocols, best management practices (BMPs), and other conditions” identified in a CAFO’s NMP and determined by the permitting authority to be necessary to meet the requirements of 40 CFR part 122.42(e)(1). In order to meet those requirements, the information, protocols, BMPs, and other conditions in the NMP must, at a minimum, address the following: manure storage, mortality management, clean water diversions, prevention of direct animal contact with water, chemical handling, conservation practices to control runoff, manure and soil testing protocols, land application protocols and record keeping requirements pursuant to 40 CFR § 122.42(e)(1). For a detailed discussion of each of the minimum measures, see Chapters 5 and 6 of the NPDES Permit Writers’ Manual for CAFOs.

We have worked closely with you in the past to develop an NPDES CAFO permit template to be used as a guidance on a case-by-case basis. Virginia’s first NPDES CAFO permit represents a step in program development, and with this and each subsequent permit approval in Virginia, the program improves.

Although the nine minimum requirements for NMPs set forth in 40 CFR § 122.42(e)(1)(i-ix) have been addressed in 9VAC25-31-200(E)(1)(a-i), the NMP must discuss the required elements of an NMP in a clear, consistent, and accurate manner. The NMP as written is general in nature, and lacks a description of how a facility will implement its individual NMP.

An analysis of how criteria of the federal nine minimum requirements are met, must be included in NMPs. These analyses should be based on best professional judgment, inspections, and requirements set forth in 40 CFR § 122.42, applicable effluent limitations and standards, including those specified in 40 CFR part 412. Enclosed is a cross-referenced chart of specific comments and recommendations that addresses the information that the NMPs be deficient in. Some of our comments and/or recommendations have included the level of detail in NMPs, how NMPs reflect implementation of the Virginia's technical standards, and how NMPs will insure that the

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nine minimum requirements set forth in 40 CFR § 122.42(e)(1)(i-ix) are achieved.

Fact Sheet

1. Page 13/130, 32. *EPA comments received on draft permit* states that *EPA has no objections to the adequacy of the draft permit*. EPA reserves the right to provide general comments upon, objections to, or recommendations with respect to the proposed permits.

DEQ-Response to comment:

This language was placed in the draft fact sheet as a placeholder by the staff in Tidewater. We understand that EPA may submit final comments related to these draft permits. Those comments will be added to the fact sheet.

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40 CFR § 122.42(e)(1)(i-ix)	VA NMP Locations	Comments	DEQ Response/Comment
122.42(e)(1)(i) Ensure adequate storage of manure, litter, and process wastewater, including procedures to ensure proper operation and maintenance of the storage facilities.	<ul style="list-style-type: none"> Secondary Containment Document Narrative Manure Production Summary Liquid Manure Production Details NMP Special Conditions 	<p>An analysis of adequate storage is missing. This analysis, at a minimum, should include:</p> <ul style="list-style-type: none"> The storage capacity, including its calculations; annual manure production (based on calculation or records); manure export timing/amounts; process wastewater collection systems must meet the ELG for zero discharge except from a 24-hr/25-year storm. 	<p>The permit conditions (Part I C 7, Part II A 1 & Part III A 1), the NMP special conditions and the NMP components address Manure Management so as not to discharge except due to a 25 year, 24 hour storm event. The application addresses the storage capacity, the liquid manure production details and the Manure production summary includes the calculations related to manure production and storage. The NMP narrative, spreading schedule and job sheets address the timing and rates for utilization.</p>
122.42(e)(1)(ii) Ensure proper management of mortalities (i.e., dead animals) to ensure that they are not disposed of in a liquid manure, storm water, or process wastewater storage or treatment system that is not specifically designed to treat animal mortalities.	<ul style="list-style-type: none"> NMP Special Conditions 	<p>An analysis of proper mortality management is missing. This analysis, at a minimum, should include:</p> <ul style="list-style-type: none"> The NMP should include a description of the method of mortality management used on each facility, and how that method is performed. The designated locations where mortalities are handled, as well as mortality handling procedures, should be described to ensure that mortalities on this facility are not disposed of in a liquid manure, storm water, or process wastewater storage or treatment system that is not specifically designed to treat animal mortalities For instance, if composting, how is composting performed (i.e., it is mixed with other manure, is it included in the manure analysis?). How was the mortality management structure or area designed, constructed and maintained to handle mortalities and divert clean water or collect process wastewater? 	<p>As I mentioned during our call on June 4th, the components of the NMP are specific in Virginia. This item is not a required item in the NMP. In order to address this item, it was added as a condition in the permit (Part I C 9 & Part II B 7) and is required to be addressed in the farm Operating Manual. This information will be included in the Farm Operating Manual as required by Part II C 4 c of the permit.</p>

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40 CFR § 122.42(e)(1)(i-ix)	VA NMP Locations	Comments	DEQ Response/Comment
122.42(e)(1)(iii) Ensure that clean water is diverted, as appropriate, from the production area.	<ul style="list-style-type: none"> Secondary Containment Document NMP Special Conditions 	<p>An analysis of clean water diversion is missing. This analysis, at a minimum, should include:</p> <ul style="list-style-type: none"> For instance, the following questions may assist to develop an analysis of clean water diversion: have erosion controls and diversion practices been designed, constructed, operated, and maintained to divert clean water from the production area. 	As I mentioned during our call on June 4 th , the components of the NMP are specific in Virginia. This item is not a required item in the NMP. In order to address this item, it was added as a condition in the permit (Part II B 9) and is required to be addressed in the Farm Operating Manual. This information will be included in the Farm Operating Manual as required by Part II C 4 c of the permit.
122.42(e)(1)(iv) Prevent direct contact of confined animals with waters of the United States.	<ul style="list-style-type: none"> No related language was found. 	<p>An analysis that confined animals cannot directly contact WOUS is missing. This analysis, at a minimum, should include the following:</p> <ul style="list-style-type: none"> Are there confined animals on this facility that have access to WOUS?, and; what measures are in place to keep confined animals from directly contacting WOUS (e.g., stream bank fencing, stream crossings, etc)? 	As I mentioned during our call on June 4 th , the components of the NMP are specific in Virginia. This item is addressed in the NMP through the liquid manure production details (see the last page of this document with confinement circled) which includes the calculations related to manure production and provides details regarding animal confinement. These animals are confined 100 percent of the time. Part II B 3 of the permit requires that the Permittee prevent direct contact of animals with State Waters. Based on the fact that the animals are confined 100 percent of the time, the animals will never have contact with State Waters.
122.42(e)(1)(v) Ensure that chemicals and other contaminants handled on-site are not disposed of in any manure, litter, process wastewater, or storm water storage or treatment system unless specifically designed to treat such chemicals and other contaminants.	<ul style="list-style-type: none"> Secondary Containment Document 	<p>An analysis of chemical handling is missing. This analysis, at a minimum, should include:</p> <ul style="list-style-type: none"> The designated locations where chemicals are stored, as well as chemical handling procedures, should be described to ensure that chemicals on this facility do not come into contact with manure or process wastewater. A prevention plan could be developed to explain how to avoid spills, how to properly dispose of chemicals, and what to do in the event of a spill. 	As I mentioned during our call on June 4 th , the components of the NMP are specific in Virginia. This item is not a required item in the NMP. In order to address this item, it was added as a condition in the permit (Part II B 2) and is required to be addressed in the Farm Operating Manual. This information will be included in the Farm Operating Manual as required by Part II C 4 i. Language was added to include this requirement as a component in the Farm Operating Manual based on this comment. New language: <u>i. practices, procedures and methods which will be followed to ensure that chemicals and other contaminants handled at the facility are not disposed of in any manure, process wastewater, or storm water storage or treatment system unless such systems are specifically designed to treat such chemicals and other contaminants.</u>

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40 CFR § 122.42(e)(1)(i-ix)	VA NMP Locations	Comments	DEQ Response/Comment
122.42(e)(1)(vi) Identify appropriate site specific conservation practices to be implemented, including as appropriate buffers or equivalent practices, to control runoff of pollutants to waters of the United States.	<ul style="list-style-type: none"> Narrative USDA Maps NMP Special Conditions 	<p>The NMP needs to document all BMPs in place, and shall require continued implementation of these BMPs as well as any new BMP that may be installed/implemented.</p> <ul style="list-style-type: none"> For instance, NMPs should include an additional section that describes site specific BMPs that are implemented on a particular facility. The NMP planner would complete this section after visiting the farm and would describe site specific nutrient management practices, site specific conservation practices, and BMPs currently in place on the facility, as well as those applicable to this facility that need to be installed but are not in place yet, if any. This section should include a description for each practice detailing how a particular practice is/was designed, constructed, operated, and maintained (if applicable). Recordkeeping requirements should be included (could reference a form) to ensure continued implementation and maintenance of all existing BMPs. 	<p>As I mentioned during our call on June 4th, the components of the NMP are specific in Virginia. This item is not a required item in the NMP. In order to address this item, conditions were included in the permit (Part I B 1 b, Part I C 2 b, & Part III B 2). It is also required to be addressed in the Farm Operating Manual as required by Part II C 4 b of the permit. The permit conditions include recordkeeping and the Farm Operating Manual requires a list of BMPs if they are required to ensure compliance with the permit.</p>
122.42(e)(1)(vii) Identify protocols for appropriate testing of manure, litter, process wastewater, and soil.	<ul style="list-style-type: none"> Soil Maps (Fields) Soil Test Summary Manure Production Summary Liquid Manure Production Details NMP Special Conditions 	<p>The NMP needs to document all lab reports (e.g., soil and manure). These reports are to be dated and signed. The lab(s) may include recommendations.</p>	<p>As I mentioned during our call on June 4th, the components of the NMP are specific in Virginia. This item is not a required item in the NMP, the analytical results of the sampling are only required. The permit requires that the Permittee report all analysis data annually as required in Part I C 3. As I explained during our conversation, DEQ staff can request the analytical reports at any time as required by Part IV D, the Permittee shall furnish such records. (See email attachments-manure analysis laboratory reports).</p>

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40 CFR § 122.42(e)(1)(i-ix)	VA NMP Locations	Comments	DEQ Response/Comment
122.42(e)(1)(viii) Establish protocols to land apply manure, litter or process wastewater in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter or process wastewater.	<ul style="list-style-type: none">• Narrative• Use of hog manure effluent in cropping rotations• USDA Maps• Nutrient Balance Sheet• NBS Notes• Manure Production Summary• Liquid Manure Production Details• NMP Special Conditions• 	The NMP addresses this element.	N/A
122.42(e)(1)(ix) Identify specific records that will be maintained to document the implementation and management of the minimum elements described in paragraphs (e)(1)(i) through (e)(1)(viii) of this section.	<ul style="list-style-type: none">• NMP Special Conditions	<p>Record keeping-related requirements are found in multiple locations throughout the NMP Special Conditions document.</p> <ul style="list-style-type: none">• It may be helpful for the permittee if the requirements to maintain all necessary records are listed in a single location. Providing Record Keeping Forms may help to ensure compliance with the Clean Water Act.	<p>The permit recordkeeping conditions are contained in one part of the permit (Part I C).</p> <p>The Permittee uses a specific recordkeeping management software and hardware which has been showcased to EPA and DEQ staff onsite and at the last CAFO Conference. It is not our intention to make any changes to their recordkeeping practices.</p>

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VA NMP Language

Narrative

Use of hog manure effluent in cropping rotations

Double-crop sorghum

Soybeans

Collecting Information (DEQ Inspection)

Recovery Process

Stop the source

Contain the flow

Contact the appropriate authority

Stay with the incident until relieved

Recovery depends on the contaminant (e.g., for waste water the water would be pumped either back into the lagoon or recovered and land applied to an application field.

Maps

NMP Balance Sheet (NBS)

Commercial Application Method

Notes (NBS)

Soil Test Summary

Manure Production Summary

Liquid Manure Production Details

Net Precipitation Excess

NMP Special Conditions for VPA and VPDES

Soil Samples

Soil Test Analysis

Representative Manure Sample

Crops

Manure Application Schedule

Hay/Pasture

Manure Application Uniform

Setbacks

Manure Runoff

Manure Odor

Liquid Irrigation

Spreader Calibration

New Waste Storage

Earthen Storage

New Lagoons

Anaerobic Lagoons

Waste Discharge

Waste Handling Structure

Composting of Animal Mortalities

Monitor Groundwater

NMP Amendments Based on Crop

NMP Amendments Process/Criteria

NMP Minor Changes

NMP Modification Timing

Conditions do not override

Manure Spreading Schedule

Swine Manure Spreading Schedule

Closure of Animal Waste Storage Facilities

Liquid Manure Production Details

$$\text{production [kgal/yr]} = (\# \text{ confined})[\text{animals}] * (\text{avg wt})[\text{animal-lbs/animal}] * (\text{prod factor})[\text{gal/yr/animal-lb}] * (0.001)[\text{kgal/gal}] + (\# \text{ confined})[\text{animals}] * (\text{waste-water})[\text{gal/day/animal}] * (365)[\text{day/yr}] * (0.001)[\text{kgal/gal}]$$

Group Name	animal type	% (#) confined	avg wt	prod factor	waste water	production
Wean to Finish	Swine	100(52500)	135.0	2.74	2.0	56978.3

Net Precipitation Excess

$$\text{NPE [kgal/yr]} = \{ \text{precip (59.[in/yr])} - \text{evap (40.[in/yr])} \} * \text{pit/lagoon factor (0.9)} * \text{surface area (1569466.[sq-ft])} * (1/12)[\text{ft/in}] * (7.48)[\text{gal/cu-ft}] * (0.001)[\text{kgal/gal}] = 22500.91[\text{kgal/yr}]$$